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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,084	01/04/2007	Artur Grunwald	66968-0014	6353

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EXAMINER	
LEE, LESLIE A	
ART UNIT	**PAPER NUMBER**
3655	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/579,084	GRUNWALD ET AL.	
	Examiner	Art Unit	
	LESLIE A. LEE	3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/12/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because it improperly lists the PCT application under the section for 35 USC 119 priority.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-18 rejected under 35 U.S.C. 102(b) as being anticipated by Buchele et al. (USPN 3,108,471).

Re claim 13, Buchele et al. discloses: A method of determining the coupling torque in a friction coupling with an electro-mechanical actuator comprising a supporting element (20, fig 1) axially supported in a housing and an axially displaceable setting element (50, fig 1) supported on said supporting element, the method comprising: axially supporting the supporting element in the housing via an undisplaceably enclosed hydraulic medium (fluid in recess 32, fig 1); measuring the pressure in the hydraulic medium (62, fig 1); and calculating the coupling torque in a central controller as a function of the measured pressure and a lookup table of values for the actuator and the friction coupling (column 4, lines 36-38).

Re claim 14, Buchele et al. discloses: wherein an axial force of the actuator and a supporting force of the supporting element are calculated as a function of the pressure in the hydraulic medium, using a stored value for the effective face of the supporting element (column 4, lines 33-38).

Re claim 15, Buchele et al. discloses: wherein a coupling moment is calculated, using stored values for a friction value, and the friction face of the friction coupling is calculated as a function of the axial force of the actuator and the supporting force of the supporting element (column 4, 16-20).

Re claim 16, Buchele et al. discloses: comprising controlling the pressure in the hydraulic medium in a closed control circuit by setting the actuator to a respective nominal value (column 4, lines 47-49).

Re claims 17-18, see the rejection of claim 16, above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 19-20, 22-26, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Botterill (USPN 5,372,106) in view of Buchele et al. (USPN 3,108,471).

Re claim 19, Botterill discloses: An assembly comprising: a friction coupling with an electro-mechanical actuator (column 5, lines 36-39), the actuator comprising a supporting disc (31, fig 1) axially fixed in a housing and an axially displaceable setting disc (44, fig 1) being axially supported on said supporting disc,

Botterill does not disclose: wherein the supporting disc is provided in the form of an annular piston in an annular chamber filled with a hydraulic medium; and a pressure sensor element arranged in the housing for measuring the hydraulic pressure in the annular chamber.

Buchele et al. teaches a displaceable disc (20, fig 1) which acts as an annular piston in an annular chamber that compresses a hydraulic medium (recess 32, fig 1), and a pressure sensor (62, fig 1) that measures the pressure in the chamber. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the friction coupling of Botterill with the piston and pressure sensor arrangement of Buchele et al. because Buchele et al. states that this torque monitor is of simple construction and of high sensitivity (column 1, lines 59-60).

Re claim 20, Botterill does not disclose: wherein the pressure sensor element is connected to a branch line leading to the annular chamber.

Buchele et al. teaches a pressure sensor connected to a branch line (62, fig 1). This feature would necessarily be included when the pressure sensor of Buchele et al. is combined with the friction coupling of Botterill, as discussed above.

Re claim 22, Botterill discloses: An assembly comprising: a friction coupling with an electro-mechanical actuator (column 5, lines 36-39), the actuator comprising a supporting disc (31, fig 1) axially fixed in a housing and a displaceable setting disc (44, fig 1) which is axially supported on said supporting disc.

Botterill does not disclose: wherein the supporting disc is provided in the form of an annular plunger; an annular housing with a cover inserted into the housing, which annular housing and cover form an annular chamber which is filled with a hydraulic medium; and a pressure sensor element arranged in fluid communication with the annular chamber for measuring a hydraulic pressure in the annular chamber, wherein the annular plunger acts on the cover.

Buchele et al. teaches a supporting disc (20, fig 1) that supports a setting disc (50, fig 1). The supporting disc acts as a plunger against the housing (10, 14, 12, fig 1) and cover (34, fig 1) filled with a hydraulic fluid (recess 32, fig 1). A pressure sensor (62, fig 1) measures the hydraulic pressure in the recess.

Re claim 23, Botterill does not disclose: wherein the cover is provided in the form of a flexible diaphragm.

Buchele et al. teaches a flexible diaphragm (column 2, lines 71-72 - column 3, line 1). This feature of Buchele et al. would necessarily be included when the pressure sensing system of Buchele et al. is combined with the friction coupling of Botterill, as discussed above.

Re claim 24, Botterill does not disclose: wherein the cover is displaceable in the annular chamber and sealed relative thereto.

Buchele et al. teaches a displaceable diaphragm (34, fig 1) that is sealed (28, 30, fig 1) relative to the chamber. This feature of Buchele et al. would necessarily be included when the pressure sensing system of Buchele et al. is combined with the friction coupling of Botterill, as discussed above.

Re claim 25, Botterill does not disclose: wherein the supporting disc is sealed relative to the annular chamber by sealing rings.

Buchele et al. teaches a displaceable diaphragm (34, fig 1) that is sealed with integrated sealing rings (28, 30, fig 1). This feature of Buchele et al. would necessarily be included when the pressure sensing system of Buchele et al. is combined with the friction coupling of Botterill, as discussed above.

Re claim 26, see the rejection of claim 25, above.

Re claim 28, Botterill does not disclose: wherein the supporting disc is sealed relative to the annular chamber and the cover relative to the annular chamber, respectively, by sealing rings.

Buchele et al. teaches integrated sealing rings (28, 30, fig 1) that seal the annular chamber (32, fig 1) from the supporting disc (20, fig 1). This feature of Buchele et al. would necessarily be included when the pressure sensing system of Buchele et al. is combined with the friction coupling of Botterill, as discussed above.

Re claims 29-30, see the rejection of claim 28, above.

Claims 21, 27, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Botterill (USPN 5,372,106) in view of Buchele et al. (USPN 3,108,471) as applied to

claims 19 and 22 above, and further in view of Beccaris et al. (USPN 4,903,804) and Oppermann (USPN 4,703,663).

Re claim 21, Botterill as modified by Buchele et al. does not disclose: wherein the pressure sensor element is introduced directly into the annular chamber.

Beccaris et al. teaches a force sensor (60, fig 2) used for a torque converter in a clutch. The pressure sensor is includes a strain gauge (column 8, line 29) that is introduced directly into the compressed chamber.

Re claim 27, see the rejection of claim 25, above.

Re claim 31, Botterill as modified by Buchele et al. does not disclose: wherein the hydraulic medium forms an elastic formed member.

Beccaris et al. teaches a force sensor with a strain gauge (60, fig 1) to be compressed in a chamber. Oppermann teaches that it was well known in the art at the time of the invention that force sensors using strain gauges necessarily included an elastic element (column 1, lines 20-21). This feature would necessarily be included when the force sensor of Beccaris et al. is combined with the pressure sensing assembly of Botterill as modified by Buchele et al., as discussed above.

Re claims 32-33, see the rejection of claim 31, above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LESLIE A. LEE whose telephone number is (571)270-5927. The examiner can normally be reached on Monday - Thursday 9:00 - 6:30, Friday 9:00-5:00, with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on (571)272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. A. L./
Examiner, Art Unit 3657

May 7, 2009

/Rodney H. Bonck/
Primary Examiner, Art Unit 3655